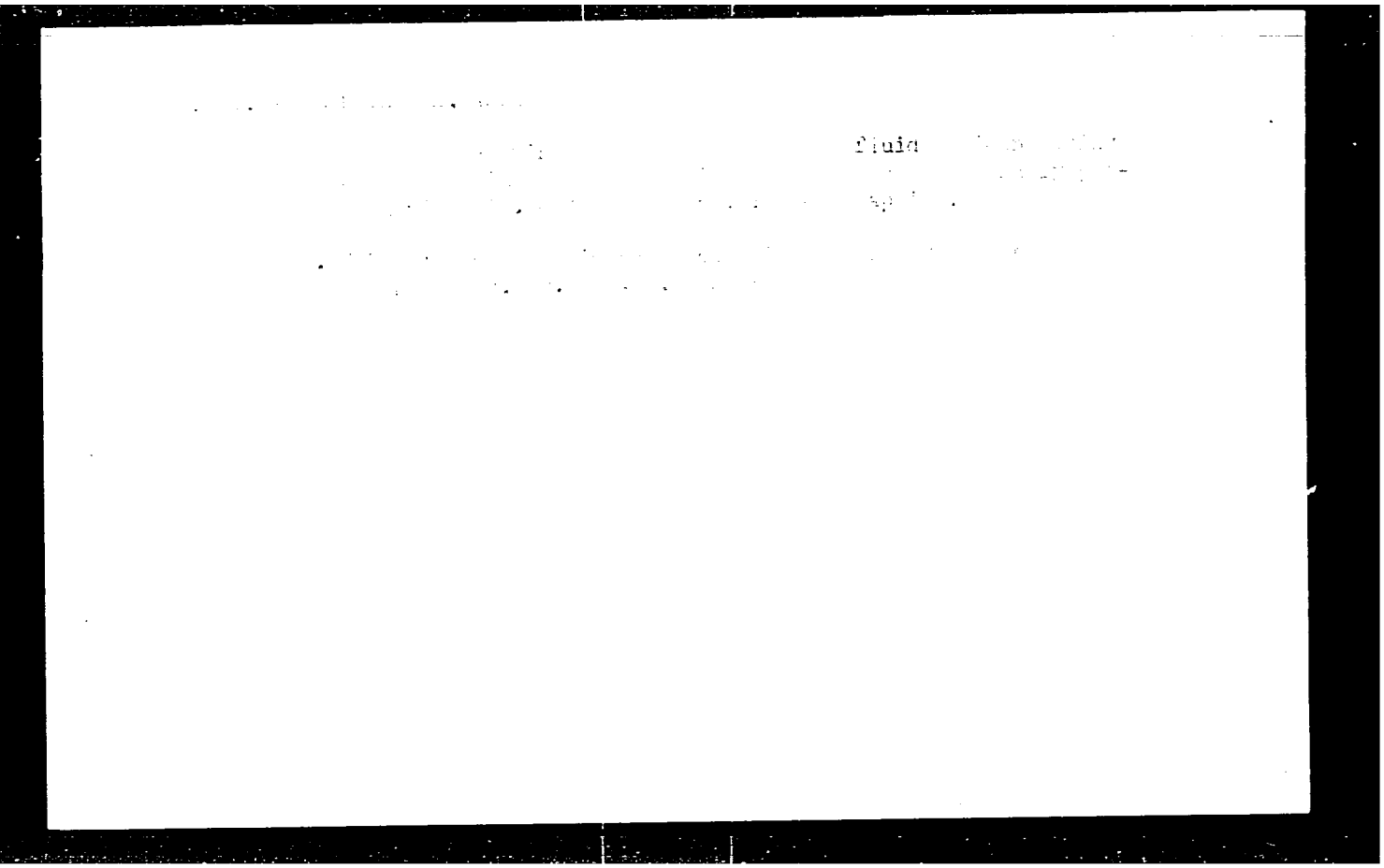


SEIDERSKI, J.

Measuring pressure of the cerebrospinal fluid. Pediat polska 28 no.10: 995-1000 Oct 1953. (CIML 25:5)

1. Of the Scientific Circle of the Internal Pediatric Students of the Pediatric Department of Warsaw Medical Academy (Heads--Prof. Z. Lejmbach, M.D. and Prof. T. Chrapowicki, M.D.). 2. Description of author's apparatus for determination of normal, increased, lowered and negative pressures. This apparatus is a combination of water and mercury manometers.

PAWLAK, Zofia; SEIDERSKI, Jan

Isotope exchange of acid radicals in pentaacetyl-β- D-fructopyranose. Rocz chemii 34 no.3/4:1195-1196 '60. (EEAI 10:3)

1. Katedra Chemii Organicznej Uniwersytetu, Warszawa
(Isotopes) (Fructopyranose pentaacetate)

SEIDERSKI, JERZY

CH[illegible], Antoni; MATE[illegible], [illegible]eresa; SEIDERSKI, Jerzy

[illegible]logical murmurs of extracardiac origin in children & youth.
[illegible]iat. [illegible]olska 32 no.5:5[illegible]-575 May 57.

1. Z Zakladu Fiz[illegible]patologii Instytutu Matki i Dziecka w Warszawie.
Dyrektor Instytutu; prof. dr med. Fr. Groer Kierownik Zakladu; [illegible]
dr med. A. Chrzascie[illegible]i i z Poradni Kardiologicznej II Kliniki [illegible]
[illegible] M Kierownik Klinik: prof. dr med. M. Michalowicz. [illegible]
[illegible], [illegible], Kasprzaka 17, Instytut Matki i Dziecka.
(HEART MURMURS [illegible])
[illegible] in chi[illegible], [illegible]

SEIDL, Ambrus

"Building fittings" by [Dr] Istvan Kalotay, Laszlo Czabalay. Reviewed by Ambrus Seidl. Epites szemle 7 no.2:61 '63.

SEIDL, Ambrus

Manufacture of "Thermopan", the Belgian heat-insulating glass. Magy ep ipar 12 no.11/12:535-539 '63.

SEIDL, Ambrus

Placement of heat-insulating glasses. Magy ep ipar 12 no.11/12:540-543 '63.

SEIDL, G.

TECHNOLOGY

Periodical: MAGY R TEXTILTECHNIKA Vol. 11, no. 1, Jan. 1959

SEIDL, G. Calendering in the bag industry. p. 19

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5, May 1959, Unclass.

SEIDL, Josef

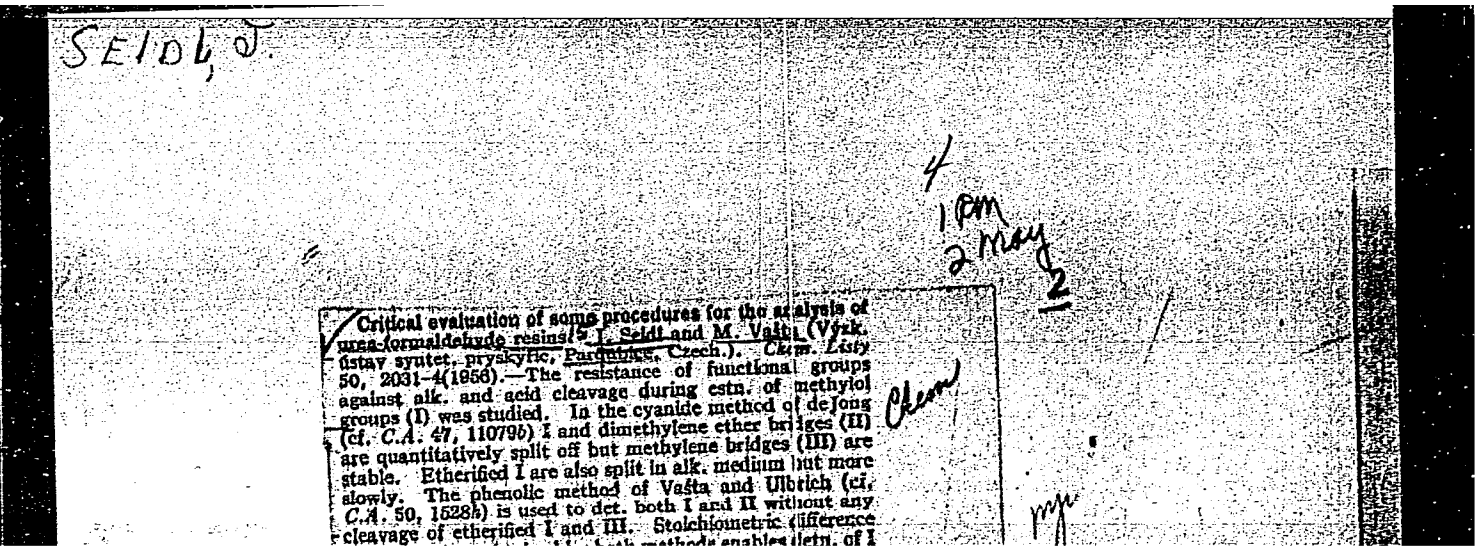
A new kind of highly acid polymer katex, Katex KP-1. Chem prum 14 no.6:322- Je '64.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.

SEIDL, Josef; MALINSKY, Jaroslav; RAHM, Jan

New trends in the development of ion-exchangers. Chem listy 58 no. 6:651-656 Je '64.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.



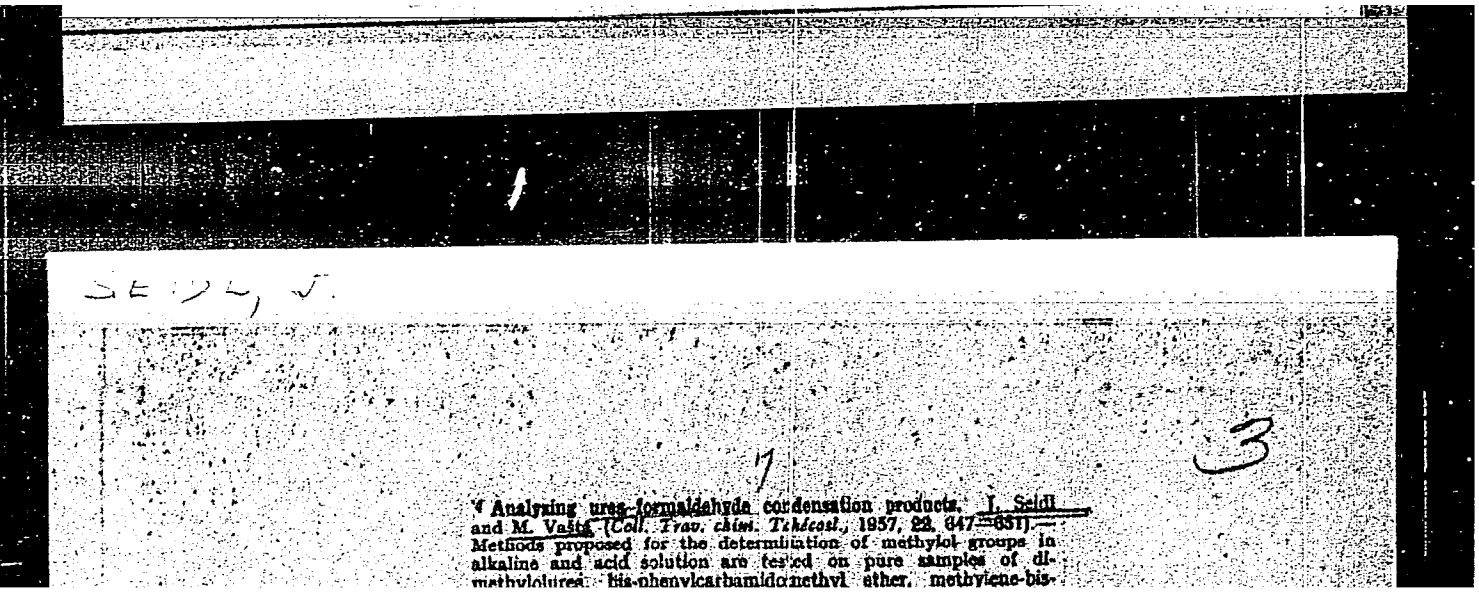
SEIDL, J.

4
1 PM
2 May
2

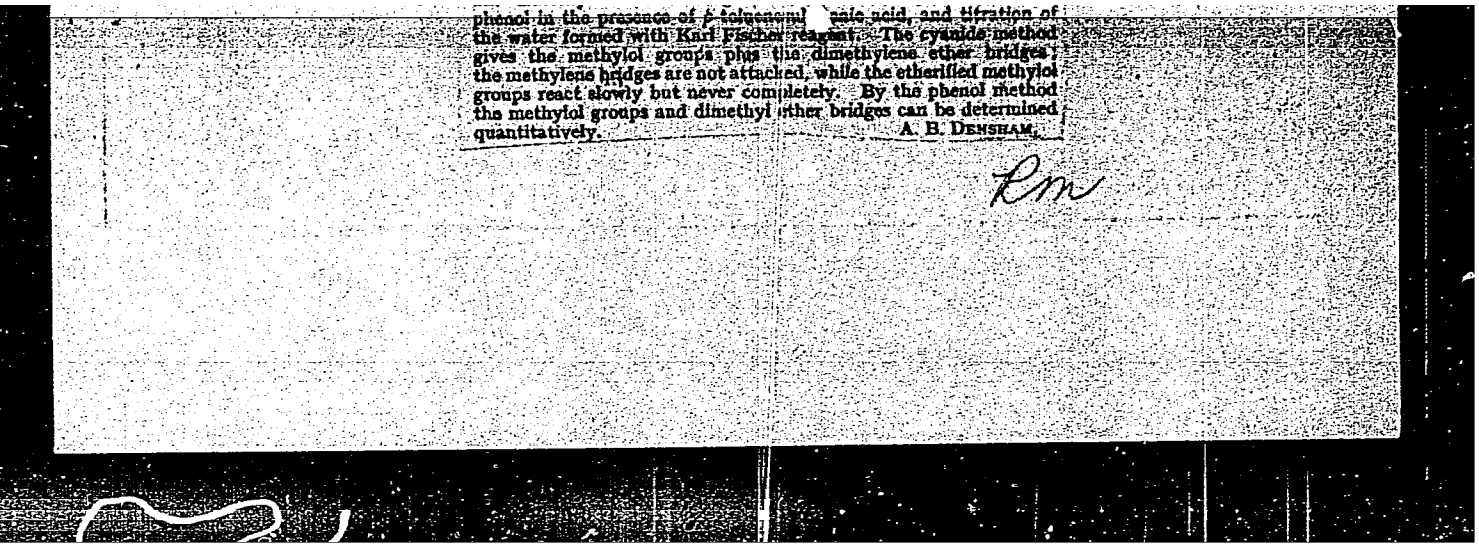
Critical evaluation of some procedures for the analysis of urea-formaldehyde resins. J. Seidl and M. Vašta (Výzk. ústav syntet. pryskyřic, Pardubice, Czech.). *Chem. Listy* 50, 2031-4(1956).—The resistance of functional groups against alk. and acid cleavage during estn. of methylol groups (I) was studied. In the cyanide method of de Jong (cf. *C.A.* 47, 11079b) I and dimethylene ether bridges (II) are quantitatively split off but methylene bridges (III) are stable. Etherified I are also split in alk. medium but more slowly. The phenolic method of Vašta and Ulbrich (cf. *C.A.* 50, 15285) is used to det. both I and II without any cleavage of etherified I and III. Stoichiometric (difference methods enables detn. of I

Clear

mjc



Analyzing urea-formaldehyde condensation products. I. Seidl and M. Vašíček (*Coll. Trav. chim. Tchécosl.*, 1957, 22, 647–651).—Methods proposed for the determination of methylol groups in alkaline and acid solution are tested on pure samples of dimethylolurea, bis-phenylcarbamidomethyl ether, methylene-bis-



phenol in the presence of *p*-toluenesulfonic acid, and titration of the water formed with Karl Fischer reagent. The cyanide method gives the methylol groups plus the dimethylene ether bridges; the methylene bridges are not attacked, while the etherified methylol groups react slowly but never completely. By the phenol method the methylol groups and dimethyl ether bridges can be determined quantitatively.

A. B. DENSHAM.

Synthesis of an ion-exchange resin selective for nickel. J. Stamberg, J. Seidl, and J. Rahm (Research Inst. Synthetic Resins and Lacquers, Pardubice, Czech.). *J. Polymer Sci.* 31, 15-24(1958)(in German).—Repetition of work done elsewhere (Klyachko, *C.A.* 46, 3827g) on the synthesis of a Ni-selective ion-exchange resin based on the dimethylglyoxime group showed that such a resin had certain disadvantages, but that some of these could be eliminated by varying the resin formulation. The original dimethylglyoxime-sulforesorcinol resin lost dimethylglyoxime on elution and in reaction with HCHO. A new resin was prepd. by condensing *p,p'*-dihydroxybenzil dioxime with HCHO in a mole ratio of 1:2; but, while the resin did not yield dioxine on elution, it was destroyed by HCHO and was not selective towards Ni. Another resin was prepd. by condensing resorcinol (1 mole) with HCHO (1.2 mole) and treating the product in an alk. alc. medium with 1-bromo-3-hydroxyminobutan-2-one to 74% conversion and then adding a further oxime group by treatment with excess $HOH_2N.HCl$ in an aq. alc. medium buffered with NaOAc to 95% conversion. The product, which was an *o*-(2,3-dihydroxyaminobutyl) deriv. of a resorcinol-HCHO resin, showed instability owing to peptization at the high pH values necessary to form a Ni complex. A further series of resins was prepd. based on polystyrene. Initially polystyrene (av. mol. wt. 150,000), EtCOCl, and $AlCl_3$ in component ratio 1:1:1 were allowed to react in CS_2 in which the reaction product was insol. This product was then treated with MeONO in a dioxane-HCl medium to form the monoxime. On addn. of H_2O a light resin was formed. The dioxime was then prepd. from this by treatment with excess NH_2OH as above, the max. conversion obtained being 72.8% based on N content. Propionyl substitution had taken place in the para position of the polystyrene. This resin showed a Ni capacity of 2 meq./g. but exhibited poor mech. properties. Further resins of this type were therefore prepd. from styrene-divinylbenzene copolymers (0.3% and 1.0% divinylbenzene). These are now being evaluated. R. J. R.

Distr: 4E2c

S/081/62/000/013/028/054
B177/B101

AUTHORS: Štamberg, Jiri, Seidl, Josef

TITLE: Extraction of germanium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 413, abstract 13K200 (Czech Patent 98054, January 15, 1961)

TEXT: Ge is extracted from the soot or ash of hard coal (0.001-0.01 % Ge) by conc. HCl. The extract is passed through an ion-exchange column, the column is flushed with pure 20 % HCl and the Ge eluted with water. The eluate contains 2.5-10 g/l Ge and 0.3 % HCl. The Ge is extracted from the concentrate electrolytically, e.g. by anodic oxidation of the Cl^- ions, thereby depositing metallic Ge at the cathode, or by electrolyzing the eluate in a bath with an anion-exchange membrane. In the latter case the Ge may be separated in the form of GeO_2. Example: an extract of Ge in 20 % HCl (Ge concentration, 0.1 g/l) is passed through the column, then the ion-exchange resin is flushed with 20 % HCl (5-10 l) and distilled water. Removal of the eluate begins after the concentration of HCl in the

Card 1/2

Extraction of germanium

filtrate drops below 3 % (the ion-exchange resin being regenerated). The eluate obtained (10-15 l, Ge concentration 2.5-4 g/l, HCl concentration 0.3-0.5 %) is freed from the admixed HCl as indicated above.
[Abstracter's note: Complete translation.]

Card 2/2

Z/009/61/000/008/004/005
E112/E153

AUTHORS: Dušek, Karel, Seidl, Josef, Malinský, Jaroslav, and Dušková, Dagmar

TITLE: Evaluation of the swelling capacity of ion-exchangers based on styrene-divinylbenzene copolymers

PERIODICAL: Chemický průmysl, 1961, No.8, pp. 439-443

TEXT: The present paper is part of an investigation of the properties of ion exchange resins derived from styrene-divinylbenzene copolymers. The swelling capacity of tridimensional polymers provides an important clue to their internal structure and to the number of cross-linkages. The swelling capacity of styrene-divinylbenzene copolymers plays an important role when introducing functional groups, e.g. chloromethylation, followed by quaternation, and has an important bearing on the properties of the final exchange resins. The authors have assessed different methods for the determination of swelling capacity and have arrived at these conclusions. 1) Centrifugation method. Simple, and suitable for series of comparative tests. Reproducibility of results very satisfactory. Sources of errors may be incomplete removal of

Card 1/5

solvent from the resin particles. Caution is recommended when determining swelling characteristics of copolymers with only a few cross-links, because the gravitational field of the centrifuge could affect the real swelling capacity. The method is not very suitable for the study of temperature effects on swelling characteristics. 2) Isothermic distillation in desiccators. Method is experimentally very simple, but not quite exact. Errors may be caused by evaporation of solvent between opening of the desiccator tap and closing of weighing bottle. Efficient thermostating of the whole system (including desiccator tap) is essential. 3) Isothermic distillation with spring balance. A diagrammatic sketch of apparatus is shown in Fig.2. The method permits the rate of sorption to be followed and temperature effects to be studied. The equipment should be placed in an air thermostat. The main advantage of the method is given by the fact that the entire sorption isotherms can be computed. 4) Dilatometric method. Provides the only means of measuring changes of volume produced by swelling; it is not suitable for finely granulated copolymers because mercury is incapable of filling up completely all the areas between the spherical particles. Maxima of

deviations for copolymers of comparatively small granular size (0.1 to 0.2 mm) may amount to as much as ± 10%. The dilatometric method permits the determination of the temperature effects on swelling characteristics. 5) Microscopic method. Not very accurate, allowing only linear changes of granular dimensions to be measured. Can be used with advantage to determine swelling characteristics of individual granules. The above mentioned procedures are not applicable to porous copolymers. Results obtained by the different methods are tabulated, showing the swelling of styrene-divinylbenzene copolymers (with increasing proportions of divinylbenzene) in toluene and chloroform.
There are 4 figures, 4 tables and 15 references: 7 English, 5 German, 2 Soviet and 1 Czech.
The English language references read:
Ref.3: H.P. Gregor, K.M. Held and J. Bellin. Anal. Chem. V.23, 620 (1951).
Ref.10: K.W. Pepper. J. Appl. Chem., 1, 124 (1951).
Ref.11: K.W. Pepper. J. Chem. Soc., 1952, 2129.
Ref.14: L.R.G. Treloar. Proc. Roy. Soc. A 200, 176 (1950).

Evaluation of the swelling capacity... Z/009/61/000/008/004/005
E112/E153

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků, Pardubice (Research Institute for Synthetic Resins and Paints, Pardubice)

SUBMITTED: January 15, 1961

Card 4/5

Z/009/63/000/002/003/004
E112/E492

AUTHORS: Seidl, Josef and Malinský, Jaroslav

TITLE: Density and porosity studies on a styrene-divinylbenzene copolymer matrix for ion-exchange resins

PERIODICAL: Chemický průmysl, no.2, 1963, 100-104

TEXT: The present paper discusses the effects of variations of polymerization conditions on the porosity and other physical properties of styrene-divinylbenzene copolymers, as structures on which to attach cation or anion-active groups. Porosity data were obtained from the difference in apparent and specific density of the dried matrix. Pyknometric techniques were applied, using mercury for the former and ethyl alcohol for the latter determinations. The following structures were compared: 1) standard styrene-divinylbenzene copolymer, containing 10% divinylbenzene; 2) styrene-divinylbenzene copolymers, prepared by copolymerization in presence of an inert, low molecular-weight diluent, such as ethylbenzene or isooctane; 3) styrene-divinylbenzene copolymer, prepared by copolymerization in presence of an inert, high molecular-weight diluent, such as polystyrene. The standard copolymers were transparent, vitreous and tough. The

Card 1/3

Density and porosity studies ...

introduction of increasing quantities of isooctane (in which the final copolymer shows no swelling) into the system, produces opaque structures with reduced mechanical strength. Copolymers, produced in presence of polystyrene show, after extraction with benzene, similar opacity but are generally less brittle. The following factors are summarized in the form of tables or graphs: 1) Effect of concentration of inert polystyrene diluent on extractability. The latter increases almost linearly with the increase of polystyrene concentration. 2) Effect of cross-linking on extractability. An increase of divinylbenzene, as cross-linking agent, reduces the extractability only slightly. 3) Effects of cross-linking on specific gravity. As the proportion of divinylbenzene is increased, specific gravity increases only insignificantly. 4) Effects of inert polystyrene addition on specific gravity. The latter is independent of the polystyrene concentration. 5) Effects of molecular weight of polystyrene diluent on specific and apparent gravity. A decrease of apparent density was recorded only when the molecular weight of polystyrene was 57×10^3 or over. 6) Effects of isooctane

addition on apparent density. An effect is exerted only when the degree of cross-linking is high, i.e. in copolymers with a high content of divinylbenzene. 7) Comparison of porosity, using polystyrene diluents with molecular weights of 57 x 10^3 and 87 x 10^3 respectively. At lower concentrations the high molecular-weight polystyrenes produce improved porosities. The effect is, however, reversed at higher concentrations, when their own porosity characteristics become the predominant features. The expressions "true" and "pseudo" porosity are discussed. True porosity is essential to obtain a polymer matrix of adequate physical strength and suitable flow-rate properties. There are 6 figures and 7 tables.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků, Pardubice (Research Institute for Synthetic Resins and Paints, Pardubice)

SUBMITTED: October 1, 1961

SAYDL, I. [Seidl, J.] (Pardubitse, Chekhoslovatskaya Sotsialisticheskaya Respublika); MALINSKI, Ya. [Malinsky, J.] (Pardubitse, Chekhoslovatskaya Sotsialisticheskaya Respublika); DUSHEK, K. [Dusek, K.] (Pardubitse, Chekhoslovatskaya Sotsialisticheskaya Respublika)

Ion exchanger bodies with a porous structure based on styrene and divinylbenzene copolymers. Plast.massy no.12:7-11 '63. (MIRA 17:2)

DUSEK, Karel; SEIDL, Josef; MALINSKY, Jaroslav

Swelling rate of ion exchange skeletons based on copolymers of styrene with divinyl benzene depends on their structure. Pt. 2. Chem prum 13 no. 12: 662-666 D '63.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

MALINSKY, Jaroslav; SEIDL, Josef

Ionex skeletons. Pt. 13. Chem prum 14 no.8:410-419 Ag '64.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.

CZECHOSLOVAKIA

SEIDL, J; DUSEK, K

Research Institute for Synthetic Resins and Lacquers, Pardubice - (for both)

Prague, Collection of Czechoslovak Chemical Communications, No 7, July 1966, pp 2695-2700

"On the skeletons of ion exchangers. Part 17: Equilibria in ternary systems composed of styrene copolymer with divinylbenzene, toluene and 2,2,4-trimethylpentane or n-butyl alcohol."

SEIDL, KAREL

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application. Chemico-Technological Problems of Nuclear Engineering. H-7

Abs Jour: Referat Zhur-Khimiya, No 5, 1958, 15047.

Author : Seidl Karel
Inst :
Title : Preparation of Pure Compounds of Uranium from Ore.

Orig Pub: Chem. prumysl, 1957, 7, No 6, 297-299.

Abstract: A review. Bibliography 8 references.

Card : 1/1

CZECHOSLOVAKIA/Chemical Technology. Chemical Products H
and Their Uses. Part II. Chemical and
Technological Aspects of Nuclear Industry.

Abs Jour : Ref Zhur-Khimiya, No 15, 1958, 50832

Author : Seidl, Karel
Inst : -
Title : Preparation of Metallic Uranium.

Orig Pub : Chem. Prumysl, 1957, 7, No 12, 649-651

Abstract : A survey of contemporary methods of preparation of metallic uranium by reduction of its compounds. -- I. Elinek

Card : 1/1

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Ap- H-7
plication. Chemical and Technological Aspects of the Nuc-
lear Industry

Abs Jour : Ref Zhur - Khim., No 24, 1958, No 82208

Author : Seidl K., Beranek M.
Inst : -
Title : Methylcyclohexanon- New Solvent for the Extraction of Uranium and for the Separation of Uranium from Thorium

Orig Pub : Chem. listy, 1958, 52, No 2, 337-339

Abstract : The separation of U is achieved from the water solution without the addition or in the presence of $NaCO_3$ and HNO_3. It has been established that the best salting-out reagent is $NaNO_3$, while in the presence of HNO_3 the separation is impaired. The reextraction of a U slat from methylcyclohexanon with the aid of a saturated caustic solution yielded 99.9% of the original quantity. Advantages of methylcyclohexanon, compared to other reagents employed,

Card : 1/2

[illegible], [illegible]; [illegible], [illegible]

"Methylcyclohexanone, a new solvent for the extraction of uranium and the separation of uranium from thorium." In German. p. 2[illegible].

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czech., Vol. 24, No. 1, Jan. 1959

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 6, Sept. 59

Unclassified

CZ/38-60-1-3/24

AUTHORS: Teplý, Jiři and Seidl, Karel

TITLE: Organic Moderators and Coolants

PERIODICAL: Jaderná Energie, 1960, No. 1, pp. 6 - 8

TEXT: The author discusses the problems arising from the utilization of organic moderator coolants for nuclear reactors and analyses some criteria for the choice of organic materials. He concentrates on polyfenyl which he considers best suited for this purpose. Next, he deals with property changes of several compounds caused by radiation and heating. Detailed descriptions are given of the Organic Moderated Reactor Experiment (OMRE-Idaho) and the Canadian heavy-water moderated power reactor using an organic coolant. There are 4 diagrams, 1 table and 8 references, 1 of which is Soviet, 6 American and 1 French.

ASSOCIATION: Ústav jaderného výzkumu ČSAV, Praha (Nuclear Research Institute ČSAV, Prague)

Card 1/1

Z/008/61/000/006/001/003
E112/E135

AUTHOR: Seidl, Karel

TITLE: Organic compounds as moderator-coolants in nuclear reactors

PERIODICAL: Chemické listy, 1961, No.6, pp. 645-652

TEXT: A literature survey (up to and including 1958) of the uses of organic compounds, particularly terphenyls, as moderator-coolants in nuclear reactors, is presented. It is based mainly on reports of the first and second Conferences for the Peaceful Uses of Atomic Energy, held in Geneva in 1955 and 1958. No contribution from Czechoslovak workers is reported. The subject matter is discussed as follows: 1) advantages and disadvantages of organic moderators; 2) method of preliminary testing of organic compounds for moderator-coolant suitability. Static and dynamic radiation methods are applied. Sources of radiation are: electrons from the Van de Graaf generator, gamma rays from ^{60}Co, and from burnt up uranium. Values for G, introduced by Burton and indicating number of molecules produced from an original compound after absorption of 100 eV energy, are listed for a number of organic

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Z/008/61/000/006/001/003
E112/E135

Organic compounds as moderator-coolants in nuclear reactors

compounds. Preliminary tests have indicated that polyphenyls exhibited an outstanding stability to radiation up to 426-454 °C. 3) Radiation damage effects of different polyphenyls are discussed and critical temperatures, i.e. temperatures at which a sudden increase in rate of decomposition sets in, are listed. 4) Effects of sources of radiation on rate of decomposition of polyphenyls are tabulated, showing clearly that rate of decomposition was independent of the source. Favourable stability characteristics are described for Santowax R and OM (a mixture of terphenyls), and their compositions are tabulated. 5) Changes of physical constants, as a result of radiation and pyrolytic effects on the polyphenyls are briefly described. 6) OMRE (Organic Moderated Reactor Experiment), Idaho Falls, the first reactor using an organic compound moderator, is described and results are reported. Composition of the moderator used by OMRE and consisting of diphenyl and the three terphenyls, is given. 7) OMRE has reportedly provided information about the following: a) rate of hydrocarbon decomposition under radiation impact; b) separation

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Z/008/61/000/006/001/003
E112/E135

Organic compounds as moderator-coolants in nuclear reactors

and deposition of decomposition products - practically none; c) heat transfer properties - practically unaffected; d) melting point - all samples of moderator OMRE containing more than 6-7% of the high-boiling fraction remained liquid on cooling to normal temperature; e) efficiency as moderator - very low thermal-neutron cross-section; impurities readily removed by distillation; concentration of high-boiling fraction easily maintained at required level; f) maintenance - very easy. OMRE operated from 1st January to 23rd June 1958 at 85% of the total time. There are 1 figure, 5 tables and 7 references: all English. The four most recent are:

Ref.3: J.R. Dietrich, W.H. Zinn. Solid fuel reactors. Addison-Wessley Publishing Company Inc., Reading, Massachusetts, U.S.A., 1958.

Ref.5: C.A. Trilling, D.W. Bareis, J.G. Burr, R.H.J. Gercke. A study of the polyphenyls for use as moderators and coolants in nuclear power reactors. Ref. P/1779. II. Conference for the Peaceful Uses of Atomic Energy. 1958.

Card 3/4

Z/008/61/000/006/001/003
E112/E135

Organic compounds as moderator-coolants in nuclear reactors

Ref.6: C.A. Trilling, The OMRE - A test of the organic moderator-coolant concept. Ref. P/421. II. Conference for the Peaceful Uses of Atomic Energy, Geneva, 1958.
Ref.7: C.A. Trilling. Addendum to P/421. Operation of the OMRE, January-June 1958. II. Conference for the Peaceful Uses of Atomic Energy, Geneva 1958.

ASSOCIATION: Ústav jaderného výzkumu ČSAV, Praha
(Institute of Nuclear Research, Czechoslovak Academy of Sciences, Prague)

Card 4/4

Z/038/62/000/007/002/006
D409/D301

AUTHOR: Seidl, Karel

TITLE: High-temperature uranium fuels

PERIODICAL: Jaderná energie, no. 7, 1962, 225 - 230

TEXT: This article, based on Western sources exclusively, lists requirements imposed on high-temperature reactor fuels, describes uranium alloys and compounds suitable for this purpose, and deals in detail with uranium monocarbide. There are 5 tables and 19 English-language references. (Technical Editor: V. Rýpar).

ASSOCIATION: Ústav jaderného výzkumu ČSAV, Řež (Nuclear Research Institute Czechoslovak AS, Řež)

Card 1/1

41610
Z/038/62/000/010/004/005
D267/D307

AUTHOR: Seidl, Karel

TITLE: Investigation of the dry-method preparation of uranium dioxide from uranium metal

PERIODICAL: Jaderná energie, no. 10, 1962, 363-366

TEXT: Results of the study of conditions prevailing during the oxidation of U with air, and of the alternate oxidation-reduction of UO_2 are presented in the form of tables. The experiments were carried out in the temperature range 300 - 700°C. The final result of the study is the following method of preparation: U metal is first oxidized to U_3O_8 by heating to 400°C in a stream of air: the obtained oxide is reduced with H_2 at 650°C to UO_2: the reactivity of the latter is enhanced by another oxidation-reduction cycle (oxidation at 400°C, followed by reduction at 650°C), the duration of both oxidation and reduction being not longer than strictly necessary. There are 7 tables. The most important English-language reference is: W.R. De Hollander, 'A process for improving the chemi-

Card 1/2

SEIDL, Karel

Uranium dioxide as a nuclear fuel. Jaderna energie 9 no.2:49-58 F '63.

1. Ustav jaderneho vyzkumu, Ceskoslovenska akademie ved, Rez u Prahy.

SEIDL, Karel

High temperature uranium fuels. Jaderna energie 8 no.7:225-230 Jl '62.

1. Ustav jaderneho vyzkumu, Ceskoslovenska akademie ved, Rez.

SEIDL, L. ; KLIR, J.

"Synthesis of a cybernetic model of the conditioned reflex." p. 37.

SLABOPROUDY OBZOR. (MINISTERSTVO PRESNEHO STROJIRENSTVI, MINISTERSTVO SPOJU A VEDECKA TECHNICKA SPOLECNOST PRO ELEKTROTECHNIKU PRI CSAV.) Praha, Czechoslovakia, Vol. 20, no. 1, Jan. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959. Uncl.

41712
S/044/62/000/010/031/042
B108/B102

AUTHORS: Klin, Irmi, Seidl, Lev

TITLE: Codes for relay coincidence circuits

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1962, 44 - 45, abstract 10V220(Stroje na zpracov. inform., v. 7, 1960, 21 - 55 (summaries in Czech, Eng., Fr., and Ger.))

TEXT: This study is devoted to the properties of the sequences $\{A_i\}$ of binary n-digit numbers A_i, in which two subsequent numbers differ from each other in only one digit (properties of Gray's codes) and in their coordinate sequences $\{h_i\}$ (sequences of the coordinate numbers which change on transition from the i-th to the (i+1)-st member of the sequence), $0 \leq h_i \leq n-1$. Cyclic and internally cyclic sequences are distinguished. A way is shown for their graphical representation in the form of a convex rectilinear polygon whose vertices are numbered by the indices i of the members of the sequence, and whose sides are numbered by the numbers h_i.

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S/044/62/000/010/031/042
B108/B102

Codes for relay coincidence circuits

The relationships between $\{A_i\}$ and $h_i\}$ as well as the properties of $\{h_i\}$ are investigated. It is shown that a cyclic sequence $\{A_i\}$ has an even number of members, and that the number of sequences with equal structure (sequences of one type) is $n!2^n$. The concept of normal sequences is introduced and their properties are examined. Also, the concept of internally symmetric sequence is defined, i. e., that of an internally cyclic sequence which behaves cyclically for all pairs $(i_1,i_2)=(2r,2r+2q+1)$ without transgressing the property that one coordinate changes on the transition from the i-th member to the next. $r = 1,2,....$; q is a constant number out of the interval $(1, 1/2i_{max}-1)$. The coincidence sequences with $q = 1$ are discerned among the internally symmetric sequences. The property $h_{2r} = h_{2r+2} \neq h_{2r+1}$, $1 \leq r \leq 1/2(i_{max}-1)$ of the coordinate sequences $\{h_i\}$ is demonstrated for the coincidence sequences. For n+1 digits, an algorithm for finding all coincidence sequences of one type is deduced. Reversible pulse counters with two inputs are proposed for a field of application. The resultant state of the counter depends on the

Card 2/3

S/044/62/000/010/031/042
B108/B102

Codes for relay coincidence circuits

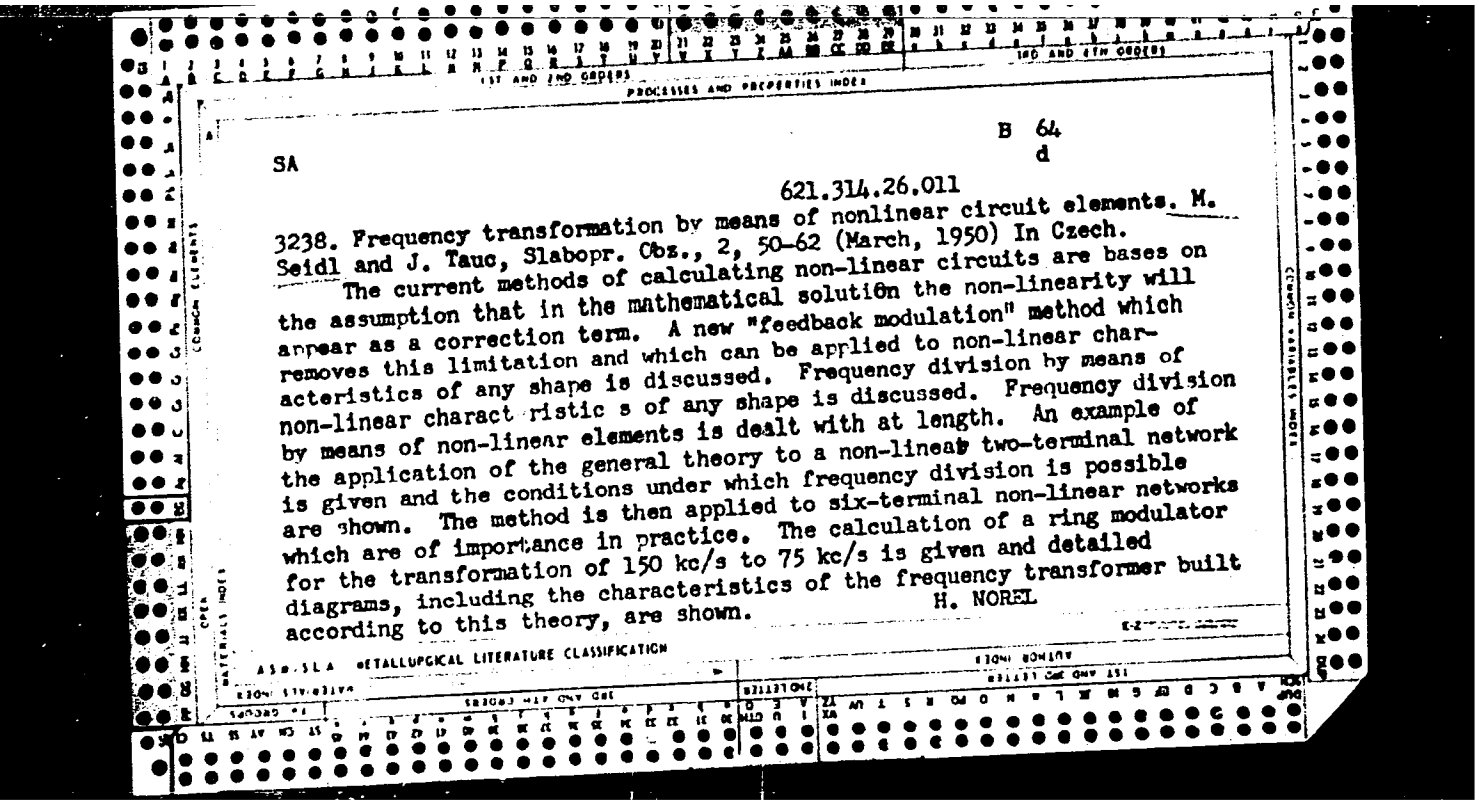
Difference in the number of pulses arriving at the first and second inputs. 3 references. [Abstracter's note: Complete translation.]

Card 3/3

SEIDL, Ludvik, Prim., Dr.

Accident rate in the Kladno miner and its analysis. Acta chir. orthop. traum. cech. 24 no.2:146-154 Mar 57.

1. Orthopedicke urazove oddeleni v Kladne.
(MINING
accid. rate in Czech., statist. (Cz))



B 64
d

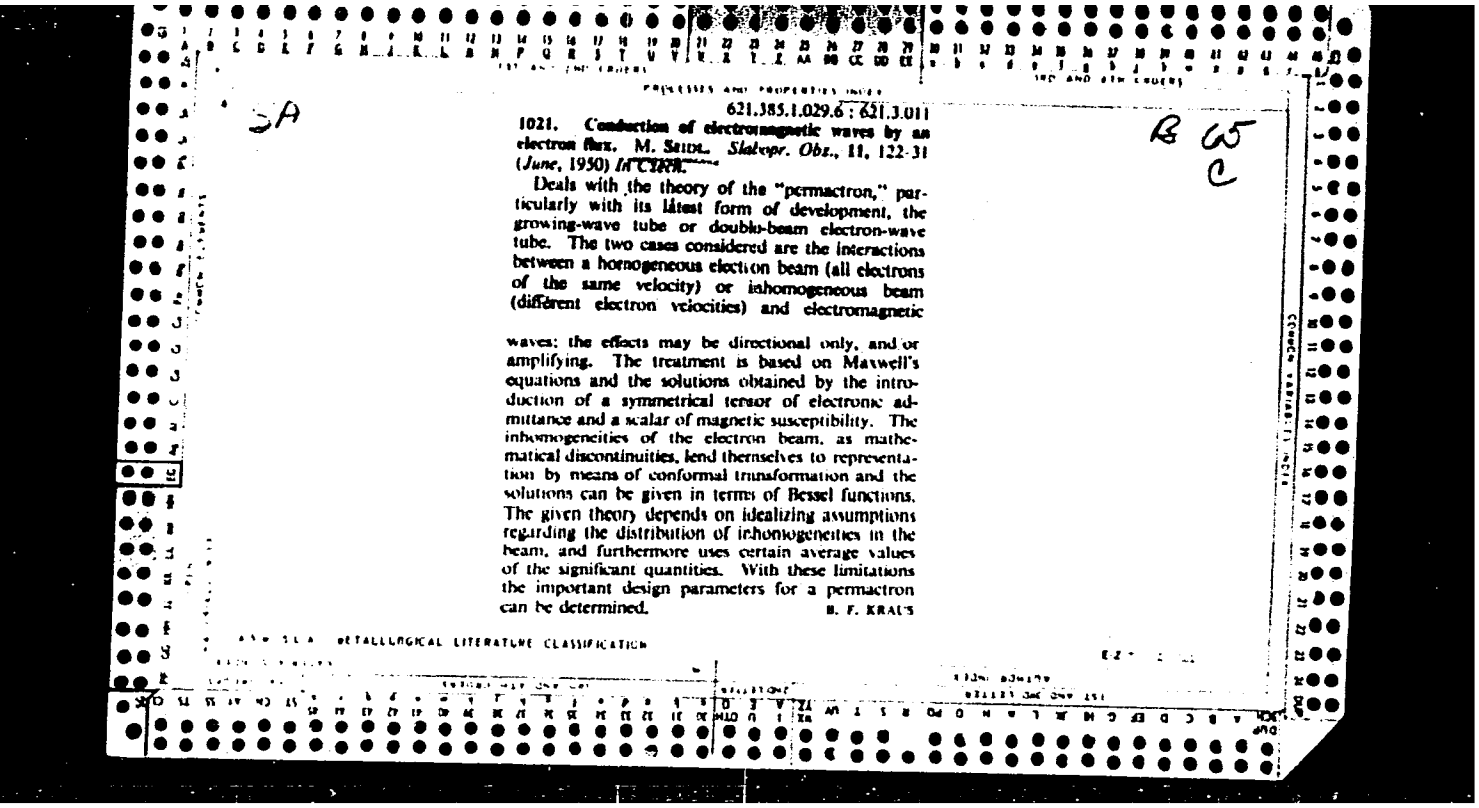
SA

621.314.26.011

3238. Frequency transformation by means of nonlinear circuit elements. M. Seidl and J. Tauc, Slabopr. Obz., 2, 50-62 (March, 1950) In Czech.

The current methods of calculating non-linear circuits are bases on the assumption that in the mathematical solution the non-linearity will appear as a correction term. A new "feedback modulation" method which removes this limitation and which can be applied to non-linear characteristics of any shape is discussed. Frequency division by means of non-linear charact ristic s of any shape is discussed. Frequency division by means of non-linear elements is dealt with at length. An example of the application of the general theory to a non-linear two-terminal network is given and the conditions under which frequency division is possible are shown. The method is then applied to six-terminal non-linear networks which are of importance in practice. The calculation of a ring modulator for the transformation of 150 kc/s to 75 kc/s is given and detailed diagrams, including the characteristics of the frequency transformer built according to this theory, are shown.

H. NOREL



621.385.1.029.6 : 621.3.011

1021. **Conduction of electromagnetic waves by an electron flux.** M. Seidl. *Slaboproud. Obz.*, 11, 122-31 (*June*, 1950) *In Czech.*

Deals with the theory of the "permactron," particularly with its latest form of development, the growing-wave tube or double-beam electron-wave tube. The two cases considered are the interactions between a homogeneous electron beam (all electrons of the same velocity) or inhomogeneous beam (different electron velocities) and electromagnetic waves; the effects may be directional only, and/or amplifying. The treatment is based on Maxwell's equations and the solutions obtained by the introduction of a symmetrical tensor of electronic admittance and a scalar of magnetic susceptibility. The inhomogeneities of the electron beam, as mathematical discontinuities, lend themselves to representation by means of conformal transformation and the solutions can be given in terms of Bessel functions. The given theory depends on idealizing assumptions regarding the distribution of inhomogeneities in the beam, and furthermore uses certain average values of the significant quantities. With these limitations the important design parameters for a permactron can be determined.

B. F. KRAUS

Seidl, M.

C, 7, E, C, H

621.373.423

2856. Methods of producing millimetre waves. M. SEIDL. *Slaboproudý Obzor*, 16, *No.* 1, 2–12 (1953) In Czech.

The known methods of generating electrical waves of 10–0·1 mm wavelength are revkwed, their physical principles being explained and quantitatively described by means of the formulae quoted from the literature. It is concluded that the wave range of 1·0–0·5 mm can be covered by the classic electronic valves (klystron, magnetron and permactron) or the devices operating on the basis of Čerenkov effect. The generators based on relativistic effects, namely: the radiation from electrons by Doppler effect or from electrons rotating in a magnetic field, are suitable for producing wavelengths of 1–0·1 mm. The range of 5–1 mm can be covered by both types of devices. The paper contains 36 references.

B. G. SIDOROWICZ

SEIDL, M.

621.384.612 : 621.384.613

2085. ORBITAL ACCELERATORS OF ELECTRONS. M.Seidl. Slaboproudý Obzor, Vol. 17, No. 12, 698-702 (1956). In Czech.

General description, technical data and photographs of a 1.8 MeV betatron, a 3 MeV synchrotron and a 15 MeV industrial betatron are given. The 1.8 MeV betatron has a radius of 4 cm, operates at a frequency of 500 c/s and produces gamma-radiation pulses of 50 μsec duration. The synchrotron operates at a frequency of 1200 Mc/s. The industrial betatron has a radius of 23 cm and operates at the mains frequency. The device is supplied with electron pulses of 1 μsec duration and produces gamma-rays having an intensity of up to 5 r/min at a distance of 1 m (from the target).

R.S.Sidorowicz

16(2),21(3)
AUTHOR: Seidl, M.

SOV/56-36-4-51/70

TITLE: The Statistical Mechanism of Electron Capture in the Betatron (Statisticheskiy mekhanizm zakhvata elektronov v betatrone)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 4, pp 1305-1306 (USSR)

ABSTRACT: The theoretical investigation of the capture due to Coulomb interaction of electrons injected into a betatron, meets with mathematical difficulties which are connected with the integration of the equation of motion. Kovrizhnykh and Lebedev (Ref 1), as well as Matveyev (Refs 2,3) have already achieved certain results. The author of the present "Letter to the Editor" investigates the capture mechanism and the statistical density distribution of electrons in the betatron. First, the physical picture of the phenomena is discussed and the characteristic experimental observations, about which the author has already reported (Refs 4,5), are described. The present theoretical investigation is based on the results of another previous paper (Ref 7), in which the author investigated the equilibrium of a toroidal electron beam in the case of certain simplifying assumptions. Equilibrium is determined

Card 1/3

by means of the parameters $a = 2kT/E_0$ and $b = P/P_0$ ($E_0 = qV$, q = electron charge, V = injection voltage; $P = I/V^{3/2}$, I = current, $P_0 = 3.33 \cdot 10^{-5}$ $A/V^{3/2}$). If $a \gg b$ the radius of the cross section of the beam is $\rho_0 = \sqrt{a}$ (in units of the radius r_0 of the equilibrium orbit), and for the charge density distribution in the beam it holds that $\sigma/\sigma_{max} = (b/\rho_0^2)\exp\left\{-(\rho/\rho_0)^2\right\}$; ρ = distance from the beam center, $\sigma_{max} = 2\,\varepsilon_0 V/r_0^2$. This is in good agreement with experimental investigations. Figure a shows the curves of constant charge density in percents of σ_{max} measured after 20 circulations after completed injection, figure b shows the same after 100 circulations. Measurement of the number of electrons ΔN and of the temperature Δa during Δt supplied the formulas

The Statistical Mechanism of Electron Capture in the Betatron SOV/56-36-4-51/70

$$\frac{\Delta N}{N} = -e^{-u}\frac{\Delta t}{\tau_p}\ ;\quad \frac{\Delta a}{a} = -\frac{ue^{-u}}{1-e^{-u}}\frac{\Delta t}{\tau_p}\qquad u = (\rho_m/\rho_o)^2;$$

ρ_m = shortest distance between the wall and the beam center,

τ_p = relaxation time. At the author's experimental conditions

$\tau_p \sim 1$ microsecond. There are 2 figures and 7 references, 4 of which a Soviet and 3 Czechoslovakian.

ASSOCIATION: Institut vakuumnoy elektroniki, g. Praga (Institute for Vacuum Electronics, Prague)

SUBMITTED: November 21, 1958

Card 3/3

Z/037/60/000/005/045/056
E192/E382

AUTHOR: Seidl, M.

TITLE: The Trapping of Electrons Injected into a Betatron

PERIODICAL: Československý časopis pro fysiku, 1960, No. 5, p. 485

TEXT: A theory is given which describes the capture of the electrons injected into the constant magnetic field of a betatron. The reason for the capture is a strong collective interaction between the injected electrons. The mechanism causing this interaction is described and it is shown that the interaction results in the capture of the electrons. A similar mechanism for the energy exchange between the electrons is present also in a toroidal beam of the captured electrons and results in its instability which limits the magnitude of the captured charge. An expression for the magnitude of the charge which can be captured is given. The theoretical conclusions are corroborated by experimental results.

ASSOCIATION: Ústav vakuové elektroniky ČSAV, Praha (Institute of Vacuum Electronics of the ČSAV, Prague)

Card 1/1

S/058/62/000/003/025/092
A061/A101

24.6730

AUTHOR: Seidl, M.

TITLE: Bunching phenomena during electron injection into the betatron. I. Experiments

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1962, 3, abstract 3B35 (Chekhosl. fiz. zh., 1961, v. B11, no. 6, 390 - 405, English; Russian summary)

TEXT: Under suitable conditions, electrons injected into the betatron produce hf oscillations. The oscillating properties are experimentally investigated, and a correction is introduced into the earlier explanation of the nature of these oscillations which are caused by the azimuthal bunching of injected or captured electrons. The bunching is due to the regenerative amplification of fluctuations of the space charge density. The amplification results from azimuthal instability which was earlier studied theoretically. The bunching of injected electrons appears to be the primary cause of the capture of electrons injected into a constant or slowly changing magnetic field. The bunching of captured electrons limits the

√B

C. A. SEIDL, O. 1A

Development of the manufacture of sulfuric acid and of superphosphate. Ottó Seidl (Hungária Chem. and Met. Factory, Budapest).—*Magyar Kém. Lapja* 5, 24-7(1950).—History and crit. discussion of industrial methods. I. F.

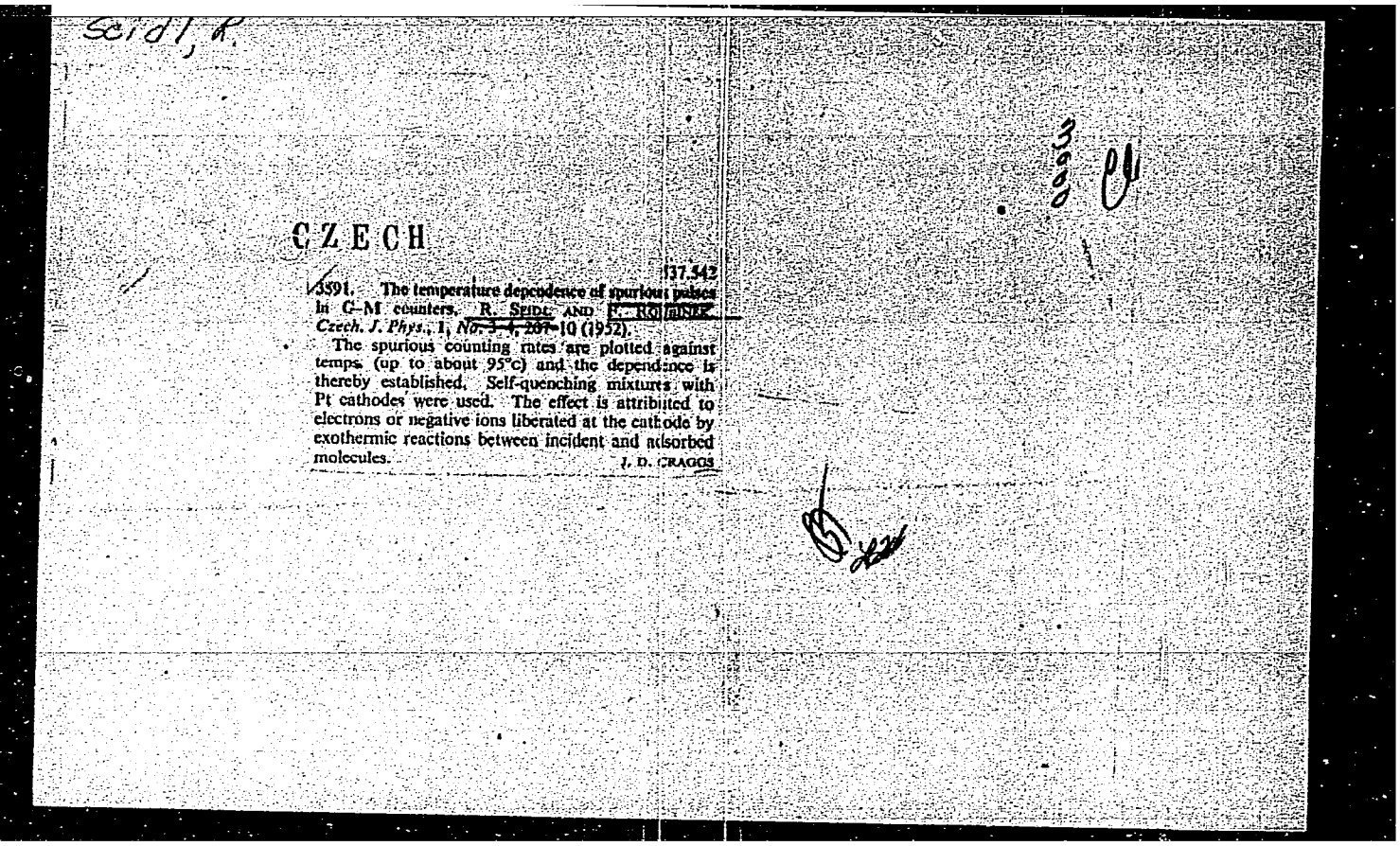
Seidl, R

CZECH

537.542

4626. Spurious random pulses in Geiger-Müller counters. R. SEIDL. *Czech. J. Phys.*, 1, No. 3–4, 160–70 (1952). (In German.)

Spurious random pulses were found which are independent of external radiation, depending exponentially on the voltage above the threshold of sensitivity of the counter and on the reciprocal value of the absolute temperature. It is shown that the assumption of chemical reactions taking place on the surface of the cathode theoretically leads to an identical dependence on the temperature. By calculation one can find the numerical values of the activating energies of chemical reactions or the work function of the metals of the cathode materials. A.



Scidl, R.

CZECH

137.542

3591. The temperature dependence of spurious pulses in G-M counters. R. SEIDL AND F. ROSMUS. *Czech. J. Phys.*, 1, No. 3-4, 207-10 (1952).

The spurious counting rates are plotted against temps. (up to about 95°C) and the dependence is thereby established. Self-quenching mixtures with Pt cathodes were used. The effect is attributed to electrons or negative ions liberated at the cathode by exothermic reactions between incident and adsorbed molecules.

J. D. CRAGGS

Seidl, Radko

6

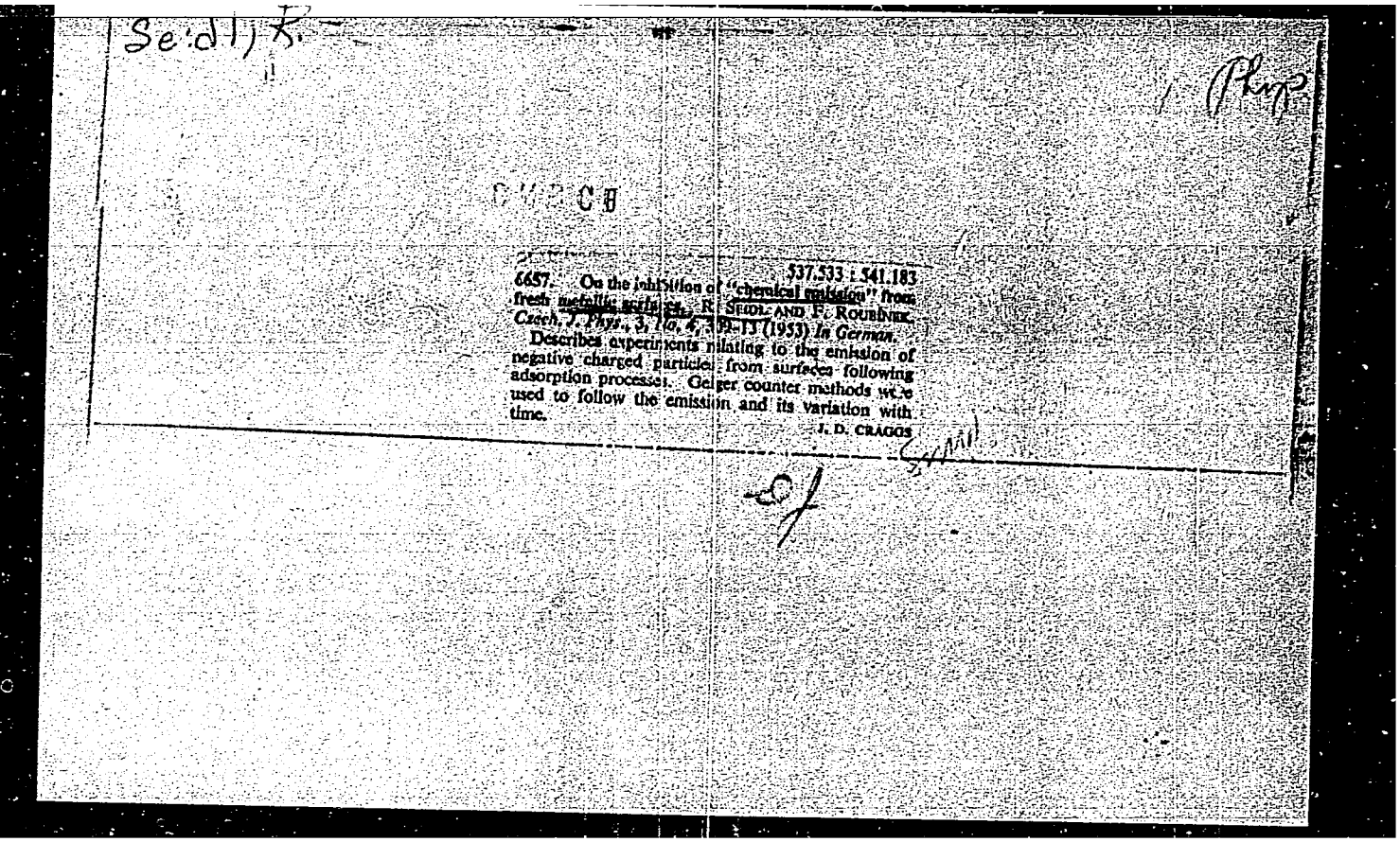
The electron emission which results as a secondary phenomenon from the effect of a gas phase on a metallic surface. Frantisek Roubinek and [illegible] Seidl (Czech. Acad. Sci., Prague). *Czechoslov. J. Phys.* [illegible] (1953) (in German).—The electron emission from metallic surfaces which are in contact with a gas phase is attributed to the accompanying chem. reactions which end on the metallic surface. In some tests small amts. of pure dry H and O are admixed with the main filling. Tests are conducted on the conditions necessary for the generation of the emission, on the time and temp. dependences of the emission, and on the change of work function which occurs in connection with the processes that affect the emission from the emitting surface. The emission occurs only when O is present. For comparison purposes the metallic surfaces can be cleaned in a H or an A discharge. The deionization effect of pos. ethylene ions on the emitting surface is also studied. From the test results math. formulas are derived which show the time and temp. dependence on the emission current. From the idea of oxidized surfaces on metals a theory of the external conditions of the investigated emission is deduced and it is shown that the deduced correlations are in complete qual. agreement with all experimentally detd. properties of the investigated emission. Furthermore, differences are established between these test results and the theories disclosed by Haxel, *et al.* (*C.A.* 45, 9300i), and certain shortcomings in their interpretation of the phenomenon cited are briefly implied. It is also shown that a test of this kind cannot offer any conclusive knowledge on the actual mechanism of the elementary emission processes.

George Meister

SEIDL, Radko.

Adsorption in the gaseous state on the surface of solids [in German]. Chekh.fiz.zhur. 3 no.3:258-259 S '53. (MLRA 7:6)

1. Institut tekhnicheskoy fiziki ChSAN, Praga. (Adsorption)



Seidl K.

537.533 : 541.183

6657. On the inhibition of "chemical radiation" from fresh metallic surfaces. R. Seidl and F. Roubinek. *Czech. J. Phys.*, 3, No. 4, 399–413 (1953) *In German.*

Describes experiments relating to the emission of negative charged particles from surfaces following adsorption processes. Geiger counter methods were used to follow the emission and its variation with time.

J. D. CRAGGS

SEIDL, R.
ROUBINEK, F.

"External Conditions of Chemical Emission" P. 22
(CESKOSLOVENSKY CASOPIS PRO FYSIKU Vol. 4, No. 1, Feb.1954 - Praha, Czech.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, April 1955, Uncl.

SEIDL RADKO

CZECH

The conditions at the surface for chemical emission. Radko Seidl and František Roubínek (Czech. Acad. Sci., Prague). *Czechoslov. J. Phys.* 4, 131-8(1954)(in German); cf. *ibid.* 2, 179(1953); *C.A.* 48, 11908a, 12543d.—The emission is observed in a Geiger-Müller counter contg. a cylindrically pressed Cu cathode and filled with O_2, C_2H_4, and A. The temp. region investigated is 40–250°. The cathode is regenerated in alc. vapor at about 400°, and the counter is also degassed at this temp. The pressure of O_2 in the closed vessel is obtained by heating BaO_2, and is maintained by the corresponding partial pressure of O_2 (about 0.2 mm. Hg) over BaO_2.

George Meister

SKIDL, R.

Mechanism of emission process during chemical emission. p. 523. (CESKOSLOVENSKY CASOPIS PRO FYSIKU, Vol. 5, No. 5, Sept 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

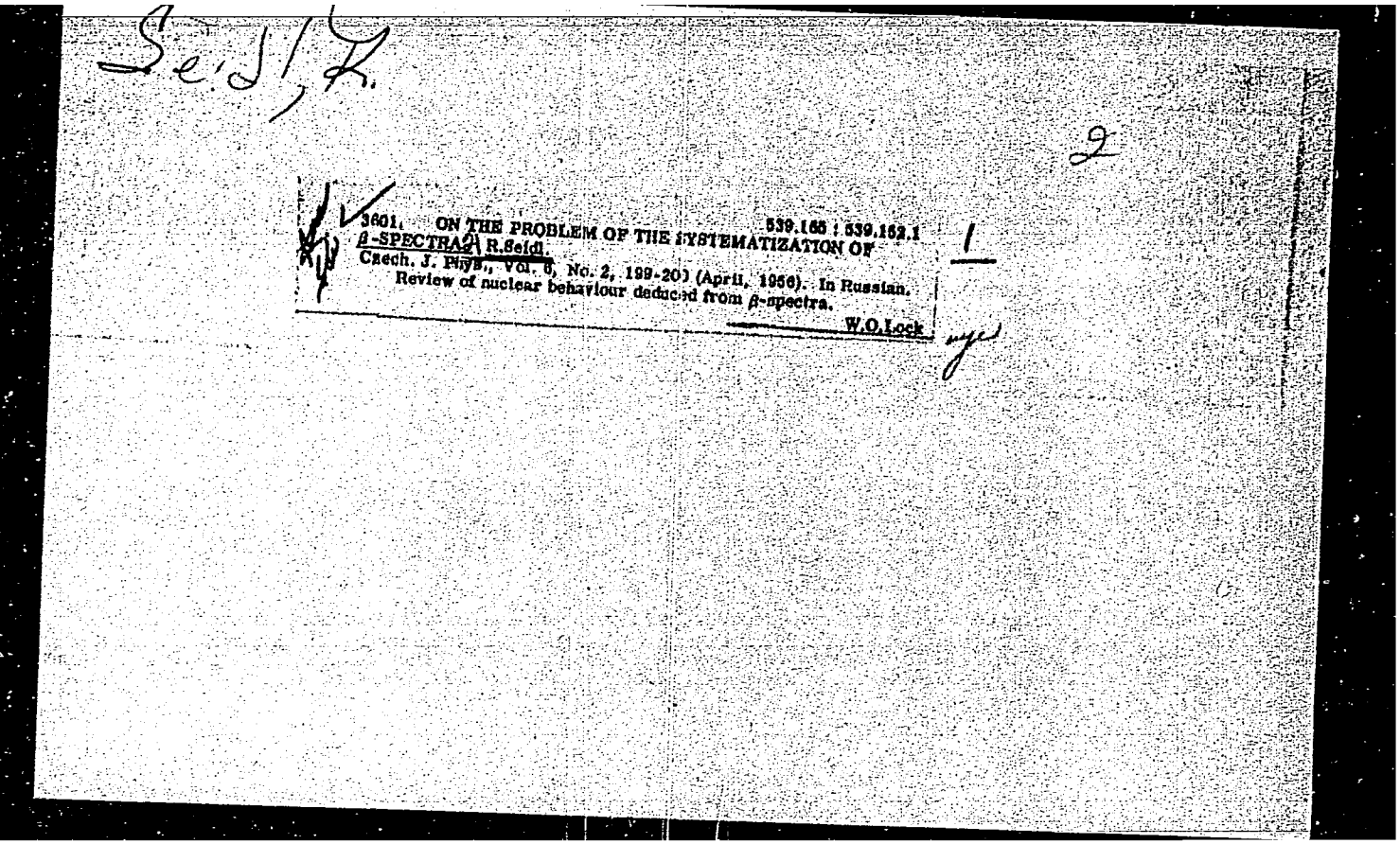
Seidl, R.

550.378

7856. RADIOMETRY IN GEOPHYSICS. J.Bačkovský and R.Seidl. Czech. J. Phys., Vol. 6, No. 1, 75-83 (Jan., 1956). In Russian.

From experience gained during numerous field surveys it follows that: (1) The construction of portable instruments and auxiliary equipment for the relative measurement of radioactivity of the soil have proved useful both from the point of view of technical applicability and economy as well as from the point of view of sensitivity, reproducibility and speed of measurement. (2) The use of G-M counters sensitive to β-rays in a vertical position in shallow holes drilled in the soil increased the share of the soil radiation and lowered the relative influence of cosmic ray background on the results of measurements. (3) The conditions for the reproducibility of measurement in the field were determined. (4) A method of standardizing results was worked out for the simultaneous use of several instruments having a different relative sensitivity of various kinds of radiation. (5) Radiometric mapping along lines having the same activity was carried out to eliminate the effect of isolated deviations caused by local conditions and to ensure a more reliable interpretation of the results of measurements. (6) It was shown by practical examples that by the radiometric method under suitable conditions it is possible to localize the position of tectonic faults or contacts of rocks having different activity even on covered formations. (7) Water and its motion in the earth has a considerable effect on the origin of radioactive anomalies. (8) A correlation was found to exist between the chemical composition and the activity of the rock in a bed of manganese pyrite ore.

A.



Seidl, R.

2

3601. ON THE PROBLEM OF THE SYSTEMATIZATION OF β-SPECTRA. R.Seidl. Czech. J. Phys., Vol. 6, No. 2, 199-201 (April, 1956). In Russian. Review of nuclear behaviour deduced from β-spectra. W.O.Lock

539.163 : 539.162.1

1

Seidl, R.

Contribution to the systematization of E-spectra. P. 222
CESKOSLOVENSKY CASOPIS PRO FYSIKU. (Ceskoslovenska akademie ved, Ustav technicke fysiky) Praha
Vol. 6, no. 2, Mar. 1956

Source: EEAL - LC Vol. 5. No. 10 Oct. 1956

SEIDL, RADKO

Mechanism of the emission process during chemiemission. Radko Seidl (Czech. Acad. Sci., Prague). *Czechoslov. J. Phys.* 6, 487-95(1956)(in German).—The electron emission of oxidized Ni, Fe, Pt and Cu-Mg films between room temp. and 600° was measured after bombardment of the surfaces with slow electrons. Three max. can be observed if the temp. increases. The emission effects after irradiation with x-rays or low energy pos. ion are small. Emission was also observed without excitation after oxidation of the metals. The phenomenon can be explained if exothermic processes on the surface or the existence of color centers are assumed. F. Schossberger

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001547710005-1"

SEIDL, Radko

3
RMZ

Systematics of β-spectra. Radko Seidl (Acad. Sci., Prague). *Czechoslov. J. Phys.* 6, 674–94(1956)(In German) (Russian summary).—By analyzing the system of stable nuclei, a qual. energy diagram is obtained, which is quantitatively investigated based on the empirical values of β-spectroscopy. A possibility of finding the magnitude of the nuclear spin from these values is demonstrated. In order to det. the energy balance of β-disintegration, the change in the proper quantum state of the nucleon must be taken into account. The properties of the isotopes of element X_K are completely detd. through the properties of the isotopes of elements X_{K-1} and X_{K+1}. Considering these interrelations and the data of β-spectroscopy, the nuclear spin and the multipole nature of the nuclear γ-photons can be detd.
Manfred Mannheimer

RMZ
MT

Abs Jour : Ref Zhur - Fizika, No 12, 1958, No 27970

Author : Seidl Radko
Inst : Institute for Technical Physics, Czechoslovak Academy of Sciences, Prague, Czechoslovakia

Title : The Problem of Measurement of the Activation Energy in Non-stationary Emission Phenomena.

Orig Pub : Ceskosl. casop. fys., 1958, 8, No 2, 233-237

Abstract : A simple approximate method is proposed for the determination of the activation energy ($\mathcal{E}$) of processes that obey the following law

$$J(t,T) = J_0(t) \exp\left(-\frac{\mathcal{E}}{\kappa T}\right),$$

where J is the emission current, t the time, and T the absolute temperature. The method consists of choosing normalizing factors that transform the equation of the process to the form

$$J_{norm}(t_0,T) = \text{const} \exp\left(-\frac{\mathcal{E}}{\kappa T}\right)$$

Card : 1/2

215300

67004

CZECH/37-59-1-10/26

AUTHOR: Radko Seidl

TITLE: Influence of the Emission Properties of the Anode on the Characteristics of Geiger-Müller Counters

PERIODICAL: Československý Časopis Pro Fysiku, 1959, Nr 1, pp 60-65

ABSTRACT: We define the counting range such that the lower limit is determined by the condition that each incident slow electron produces a discharge in the counter, while the upper limit is determined by discharges occurring without incident particles. This definition is not the same as that for a plateau. The measurements were carried out on cylindrical counters of 25 mm diameter and 200 mm length. The anode was a tungsten wire of 0.06 or 0.1 mm diameter. The cathode was made of copper inactivated by a layer of tungsten. The counter was filled by a mixture of ethylene at 20 mm Hg and argon at 80 mm Hg. A 5M.ohm limiting resistor was used (Fig 1). Preliminary experiments showed that the properties of the counters rapidly deteriorated during their use. With an increasing number of pulses, the counting range decreased. This was due to the surface properties of the anode. The counters could be regenerated by changing the anode, but not by

Card 1/3

Influence of the Emission Properties of the Anode on the Characteristics of Geiger-Müller Counters

changing the gas filling. The counters could also be partially regenerated by heating the anode either in an oxidizing medium or in vacuum. It was found that by using an external extinction circuit, pulses did not shorten the counting range of the counter. It was further found that the best anodes were prepared by slow oxidation of the tungsten wires such as by first heating the anode in a moderate vacuum and later in air. The observed phenomenon is explained by electron-emission from the anode. The number of false pulses $\check{N}_e$ is proportional to the number of emission centres ν produced by electrons hitting the anode, to the number of all pulses $\check{N}$ and to some function of the voltage. Near the upper limit of the counting range $\check{N}_e = \check{N} = \check{N}_k$. From this, we obtain the condition for the end of the counting range (Eq 8); $\varkappa$ is a constant. If the anode is coated by an oxide layer, its surface contains only few electron traps. In this case the end of the counting range is caused by a different mechanism. On the other hand, the gas-filling of the counter can reduce the

67004

CZECH/37-59-1-10/26

Influence of the Emission Properties of the Anode on the Characteristics of Geiger-Müller Counters

oxide coating on the anode and thereby produce electron traps. This mechanism explains the ageing of the counter independently of the number of pulses, while the first mechanism described accounts for ageing which is dependent on the number of pulses.

Card 3/3

There are 3 figures and 4 references, of which 2 are English, 1 is Soviet and 1 is Czech.

ASSOCIATION: Ústav technické fysiky ČSAV, Praha
(Institute of Technical Physics, Czechoslovak Ac.Sc., Prague)

SUBMITTED: July 7, 1958

4

SEIDL, R.

Properties of Geiger-Muller counters. p. 384

CESKOSLOVENSKY CASOPIS PRO FYSIKU. (Ceskoslovenska akademie ved. Ustav technicke fysiky) Praha, Czechoslovakia. Vol. 9, no. 4, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 10, Oct. 1959
Uncl.

SEIDL, R.

Problems of automatic regulation of the working voltage of Geiger-Muller counters. p. 417

CESKOSLOVENSKY CASOPIS PRO FYSIKU. (Ceskoslovenska akademie ved. Ustav technicke fysiky) Praha, Czechoslovakia. Vol. 9,no. 4, 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 10, Oct. 1959 Uncl.

SEIDL, R

✓ Influence of the emission properties of an anode on the characteristics of Geiger-Müller counters. R. Seidl (Czechoslov. Acad. Sci., Prague). *Czechoslov. J. Phys.* 9, 517–23 (1959)(in Russian).—S. studies the mechanism leading to false pulses after a signal in connection with the characteristics of counters. The premature ageing of counters quenched with hydrocarbons is investigated. The anode does not only act as a passive electron acceptor but its properties can markedly influence the behavior and lifetime of the counter. A. Kremheller

2

Distr: 4E3a(w) 2 cys

The problem of exoelectron emission. Radko Seidl (Czechoslov. Acad. Sci., Prague). *Czechoslov. J. Phys.* 9, 597–605(1959)(in German); cf. *CA* 54, 10530a.—S. offers a theoretical discussion of the 2 simplest cases of exoelectron emission and indicates appropriate procedures in evaluating exptl. results. While thermoluminescence glow-curve techniques permit one to study the depth and distribution of trapping levels, these methods cannot be employed mech. in interpreting exoelectron emission since internal processes confound the relation between the electron emission maxima *vs.* temp. and the work function.

A. Kremheller

2
1-RS
2-ISP(C)
2

SEIDL, RADKO

4

Exoelectron emission from NaCl. Radko Seidl and Václav Střelka (Inst. Tech. Phys., Prague). *Naturwissenschaften* 47, 225(1960).—The problem was studied by considering the relation between the normal thermal emission of the electrons originally localized at the electron attachment centers and the thermostimulated photoelectron emission (TSPE). Measurements were made in an app. (Seidl, *CA* 51, 11046*f*) by x-irradiating artificial NaCl-monocrystals under linear temp. increase (about 10°/min.) or const. temp. TSPE was detd. in intervals of 15 sec. or more by alternating darkness and exposure to white or red light. Preliminary results and conclusions were given.

Eduard A. Wulkow

Distr: 4E2d(b) 2 cys

The exoelectron emission of germanium. Radko Seidl (Czekoslov. Acad. Sci., Prague). *Z. Physik* 157, 603–15 (1960); cf. *C.A.* 51, 11046*f*.—The exoelectron emission of *n*-type Ge was investigated after excitation with x-rays and β^- electrons. The emission consists of 2 systems of max. The system S_{100} between 20 and 150° has its main max. at 130°, the system S_{A0} (150–250°) has its main max. at 210°. The system S_{200} corresponds to trapping centers in the bulk of the material; the system S_{100}, to centers located in a thin surface layer. The latter can be strongly influenced by etching. Microscopic observation showed that grooved surfaces, as generated e.g. by grinding, emit much more strongly than surfaces which were smoothed by repeated etching. The recombination of pos. charged N ions at the surface causes emptying of the surface levels and greatly reduces the emission S_{100} without affecting S_{200}. At least 2 conditions have to be fulfilled for emission of exoelectrons: (*a*) the existence of traps filled with electrons, (*b*) the existence of lattice perturbations over large distances compared to the dimensions of an atom, e.g. dislocations or stress in the lattice. R. Nitsche.

3
2

Exoelectron emission. Radko Seidl (Czech. Acad. Sci., Prague). *Naturwissenschaften* 46, 573–4(1959); cf. *C.A.* 53, 12851*i*.—For substances such as Cu_2O, previous theories predict no measurable exoelectron emission at 160°. Also contrary to theory is the fact that for exoelectron emission from Cu_2O, activation energies >1.4 e.v. can be established, and, in spite of the small width of the forbidden bands, no emission of electrons from the valence band exists without previous excitation. An alternative explanation involves interaction of a cation space with an anion space contg. an electron of energy close to that of the forbidden band region, to give a localized higher-energy electron which may be emitted directly or after further excitation. This could explain the long-localization time in spite of the existence of the tunnel effect. Direct transition between the valence band and the localized electron position is probably not geometrically possible. Occupation of the defect by the electron must occur by the tunnel effect between the conduction band and the excited state of the localized electron. Since the excited state must not lie close to the lower edge of the conduction band, the high excitation energy is explained. P. E. Braid

S/058/62/000/011/039/061
A160/A101

AUTHORS: Seidl, Radko, Kotíková, Milada

TITLE: A method of treating anodes in Geiger-Müller counters

PERIODICAL: Referativnyy zhurnal, Fizika, no. 11, 1962, 29, abstract 11-3-57kh P (Czechosl. pat., cl. 21g, 18/01, no. 99422, April 15, 1961)

TEXT: An early decomposition of hydrocarbons, caused by an exoelectronic emission from the anode, is sometimes observed in Geiger-Müller counters. The emission is caused by a spontaneous formation of an oxide layer on the anode, containing capture levels. To avoid this appearance, it is proposed to coat the anodes of the counters with an oxide layer in advance to allow the layer have its exact stoichiometric composition and an adequate thickness, since a considerable quantity of lattice defects arises on the boundary between the metal and the oxide. The oxidation must be carried out at a high temperature, and the cooling gradually to maintain the attained state of the lattice. In the case of a tungsten anode, the oxidation is conducted in the air at 500°C for 10 min, and the cooling up to the working temperature is carried out at a rate of 10°C per min. [Abstracter's note: Complete translation]

N. S.

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Z/037/63/000/002/002/004
E024/E335

AUTHOR: Seidl, Radko

TITLE: A method for measurement of the ratio of the effective cross-sections of trapping and recombination centres

PERIODICAL: Československý časopis pro fysiku, no. 2, 1963, 104 - 114

TEXT: A method is described of measuring the ratio of the effective cross-sections of traps and recombination centres, based on an analysis of the dependence of the concentration of colour centres on the X-ray dose. The method is based on investigation of the influence of the cross-sections of the various centres on the distribution of electrons during irradiation with high-energy photons. n_α is the number of electrons in the conduction band; β is the number of electrons excited into the conduction band per unit time by photons. We assume that no electrons are thermally excited and that the lifetime τ is constant. ν_i is the density of states of the i-th kind, Φ_i is the trapping cross-section for electrons of this state and n_i is the number of electrons in it. We obtain:

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$$\frac{dn_i}{dt} = \beta \frac{\Phi_i(\nu_i - n_i)}{\sum \Phi_k(\nu_k - n_k)} \qquad (8)$$

for the special case when all ν_k are negligible compared with ν_0, which is the density of states normally full, i.e. recombination centres. ν_i are the states normally empty, i.e. trapping centres. We obtain:

$$\frac{da_i}{dt} = \frac{\beta}{\nu_i} \frac{\Phi_i(1-a_i)}{\nu_i \Phi_i(1-a_i) + \Phi_0 a_i} \qquad (13)$$

The quantities n_i or a_i can be measured with the aid of some quantity proportional to n_i, such as electronic conductivity, exoelectron emission, etc. We measure the time-dependence $\alpha n_i = f(t)$ of some quantity proportional to n_i. If we determine $\alpha(dn_i/dt)$ for any a_i and then for $2a_i$, we obtain:

$$a_i = \frac{\frac{1}{2}\frac{\beta}{(dn_i/dt)_{2a_i}} - \frac{\beta}{(dn_i/dt)_{a_i}} + \frac{1}{2}}{\frac{\beta}{(dn_i/dt)_{2a_i}} - \frac{\beta}{(dn_i/dt)_{a_i}}} \qquad (18).$$

For β and (dn_i/dt) we insert the measured quantities $\alpha\beta$ and $\alpha(dn_i/dt)$. Integrating Eq. (18) and rearranging, we obtain:

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$$\frac{\Phi_0}{\Phi_\delta} = \frac{a_{i,2} - 2a_{i,1} + a_{i,0}}{a_{i,2} - 2a_{i,1} + a_{i,0} - \ln\left[(1-a_{i,2})(1-a_{i,0})(1-a_{i,1})^2\right]} \qquad (20).$$

Provided we measure $\alpha n_i(\infty)$ and thus a_i, Eq. (20) can be used to determine the ratio of cross-sections. Eq. (13) is valid only for homogeneous irradiation of the sample. In practice, this cannot be realized but various techniques and corrections can be used to make Eq. (13) applicable. The method can be generalized for many centres. We start from an initial state in which all n_i are zero. From Eq. (8) we then obtain:

$$\left(\frac{da_i}{dt}\right)_0 = \beta \frac{\Phi_i}{\sum_k \Phi_k \gamma_k} \qquad (46)$$

where $(da_i/dt)_0$ is determined from experiment with the aid of the relation:

$$\left(\frac{da_i}{dt}\right)_0 = \frac{\left[d(\alpha_i n_i)/dt\right]_0}{\alpha\gamma_i} \qquad (47).$$

$\alpha\gamma_i$ is determined by determination of αn_i for $t \to \infty$. The

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A method for measurement ....

ratio of the cross-sections of all the centres,

$$\frac{\Phi_x}{\Phi_k} = \frac{(da_x/dt)_0}{(da_k/dt)_0} \qquad (48),$$

can be determined from the knowledge of only one ratio. The ratio of concentrations of the various centres can also be determined by a suitable rearrangement of Eq. (8). The practical application and verification of the method will be described in a separate article.

ASSOCIATION: Ústav fyziky pevných látek ČSAV, Praha
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SUBMITTED: December 30, 1961

Card 4/4

ROUBINEK, Frantisek; SEIDL, Radko; STRELKA, Vaclav

Control device of universal laboratory automatic apparatus.
Cs cas fys 13 no.2:115-123 '63.

1. Ustav fyziky pevnych latek, Ceskoslovenska akademie ved, Praha.

SEIDL, Radko, CSc.

Automation of worksites with great variability of partial functions. Automatizace 6 no.10:249-251 O '63.

1. Ustav fyziky pevnych latek, Ceskoslovenska akademie ved, Praha.

S/194/62/000/007/017/160
D222/D309

AUTHORS: Seidl, Rudolf and Hlubocký, Jindřich

TITLE: Relay counter circuit

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 7, 1962, abstract 7-1-71 ts (Czech. pat., cl. 21a^3 28/01, 21 a^1, 20/09, no. 97803, Dec. 15, 1960)

TEXT: A relay counter circuit is patented, which is suitable for various types of telephone systems. The basic use of the counter is the determination of the number of pulses in a dialling pulse train on a trunk line, and the emission of corresponding control pulses for the connection of the speech circuits at subscriber response or ring-off. The capacity of the counter is 4 pulses. The counter circuit uses 2-winding delayed relays, controlled by the dialling relay. The counter operates in a binary reflex (Gray) code, in which the beginning and end of a series of pulses are assumed to be different states (the beginning and end of sending the 4th, last, series of pulses is marked by the energization of only one relay in the counter). The response of the selected subscriber is represen-

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ted by the firing of the dialling relay and of the 1st relay of the counter, which ensures the connection of the subscribers. At subscriber ring-off, due to the firing of the control relay, the counter reverts to the state representing the end of the 4th dialling series. The counter circuit, a description of the sequence of operations and a diagram of the relay operation are given. 2 figures. [Abstracter's note: Complete translation.]

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S/194/62/000/006/171/232
D201/D308

AUTHORS: Seidl. R., and Střelka, V.

TITLE: Problem of Z-centers in exoelectronic emission of alkali halide compounds

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, 45, abstract 6Zh297 (Chekhosl. fiz. zh., 1961, B. 11, no. 11, 811-818)

TEXT: The changes with increasing temperature in the absorption spectrum of an X-ray irradiated NaCl crystal with Ca impurities were investigated using a high speed automatic recording installation. It is established that, when the crystal is heated, only the weakening of F-band is observed with the heating of the crystal and that there are no signs of appearance of Z-zones in the process of thermal discolouring. This contradicts the assumption of Bohun that the maximum at about 390°K of the thermally stimulated emission from NaCl - Ca corresponds to the destruction of Z-centers. The absence of the 460°K maximum, typical for NaCl in NaCl - Ca is explained by the authors by the fact that the destruction of F-centers

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S/194/62/000/006/171/232
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Problem of Z-centers in ...

is caused by ion processes, the character of which changes when Ca is introduced. The possible character of the above processes is discussed. 16 references. [Abstracter's note: Complete translation.]

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S/194/62/000/012/099/101
D271/D308

AUTHORS: Seidl, Rudolf and Plecitý, Václav

TITLE: Criterion forming circuit for register impulsing

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1962, 20, abstract 12-8-39 1 (Czech. pat., cl. 21a^3, 32/20, no. 98135, Jan. 15, 1961)

TEXT: An automatic exchange circuit is patented, intended for control of register impulsing. It consists of two relay sets, the first of which counts received pulse trains and the other counts pulse trains sent from the register via the appropriate contacts of both sets. Relay contacts of the first set, dependent on the number of received digits, are switched in such a manner that a galvanic connection is established between the input and the contact signifying the number of received digits. Depending on the number of digits sent out, relay contacts of the second set form a galvanic connection between the output and the contacts which record how many of the received digits still remain to be transmitted

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Criterion forming circuit ...

or have already been transmitted. Contacts of both relay sets are interconnected in a manner suitable for the required correlation between the numbers of the received and transmitted digits. Depending on the way in which the contacts are interconnected, criteria (conditions) are formed which determine whether the next incoming digit is to be retransmitted immediately after its reception from the dialling subscriber, or whether a delay is required.
[Abstracter's note: Complete translation.]

Card 2/2

SEIDL, VLASTIMIL

(2)

A magnesium-containing melanterite from Smolnik (Slovakia). Vlastimil Seidl (Vysoká škola chem., Prague, Czech.). *Chem. Listy* 48, 320–32(1954).—Chem. and x-ray analysis shows that the melanterite from Smolnik is a solid soln. of $FeSO_4.7H_2O$ and $MgSO_4.7H_2O$. The formation of the mineral in nature is discussed. E. Erdős

COUNTRY : Czechoslovakia B-5
CATEGORY :

ABS. JOUR. : RZKhim., No. 1959. No. 53008

AUTHOR : Jeidl, V.; Dubansky, A.
INST. : Higher School of Chemical Engineering, Prague
TITLE : On Methiodide of 2,6-Diisopropylpyridine (Some Physical and Structural Data).

ORIG. PUB. : Sb. Vysoke skoly chem.-technol. Praze. Oso. Fak. anorgan. a organ. technol., 1957. Praha, *
ABSTRACT : Roentgenographic (powder method) proof of the structural identity of methiodide of 2,6-diisopropylpyridine recovered from the reaction mixture in the form of tetragonal tetrahedrons, and from acetone solution in the form of tetragonal, tabular crystals. Roentgenographic (Laue, oscillating and rotation methods) determination of lattice parameters: a 16.2, c 20.8 kX, ρ 1.472, probable P. gr. P 42m. Refraction indices: n_o 1.657, n_e 1.598. The crystals are optically uniaxial. -- From authors' summary.

CARD:
* Statni nav. nakl., 1957, 167-172.

SEIDL, Vlastimil

Structure of sodium aluminum hydride II. Sbor chem tech no.3, part 2:37-47 '59.

1. Katedra mineralogie, Vysoka skola chemicko-technologicka, Praha.

S/081/62/000/002/004/107
B149/B108

AUTHOR: Seidl, Vlastimil

TITLE: Structure of complex sodium alumohydride. I

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1962, 33, abstract 2B217 (Sb. Vysoké školy chem.-technol. Praze. Odd. Fak. anorgan. a organ. technol., no. 2, 1958, 5-12)

TEXT: Large crystals of $NaAlH_4$ (> 2 mm) have been investigated. The crystals are tetragonal-dipyramidal or tetragonal-pyramidal. The double refraction is negative. The lattice parameters were determined by Weissenberg's X-ray technique (λCu):
a 5.02, c 11.31, Z = 4, Fedorov symmetry groups $I4_1$ and $I4_1/a$.
[Abstracter's note: Complete translation.]

Card 1/1

SEIDL, Vlastimil

X-ray data of Pisekite. Sbor chem tech 4 no.1:223-227 '60.
(EEAI 10:9)

1. Katedra mineralogie, Vysoka skola chemicko-technologicka, Praha.

(Pisekite)

SEIDL, V.; ERBENOVA, M.; FALTA, S.; BLATTNY, C., jun.

Testing methods of the proliferation virus in apple trees.
Vestnik vyzk zemedel 9 no.7:345 '62.

1. Vyzkumny ustav ovocnarsky, Holovousy (for Seidl, Erbenova and Falta). 2. Vysoka skola chemicko-technologicka, Praha (for Blattny).

SEIDL, Vojtech, inz., CSc.

Roof grafting, a prospective testing method against virus disease of apple tress. Vest ust zemedel 10 no.10/11: 368-369 '63.

1. Vyzkumny ustav ovocnarsky, Holovousy.

SEIDL, Z.

Double stars. p. 41. (Casopis Ceskoslovenskych Ustavnu Astronomickych, Vol. 6, No. 3, 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl